

7 data transmit control circuitry responsive to said ethernet control circuitry and
8 coupled to said transceiver, to said transmit data buffer, and to said host interface, for
9 generating a packet transmit signal causing said transceiver to begin transmitting data from
10 said transmit data buffer over said communications media;
11 a receive data buffer coupled to said host interface; and
12 data receive control circuitry responsive to said ethernet control circuitry and
13 coupled to said transceiver, to said receive data buffer, and to said host interface, for storing
14 data received by said transceiver in said receive data buffer, and for generating a receive
15 interrupt signaling to said host computer that data has been received by said transceiver,
16 wherein said data receive control circuitry is operative to generate a receive interrupt once said
17 transceiver has received over said communications media a predetermined number of bytes of
18 a data packet less than all of said data packet.

1 2. The adapter of claim 1, wherein
2 said ethernet control circuitry, said host interface circuitry, said data receive
3 control circuitry, said data transmit control circuitry, said receive data buffer and said transmit
4 data buffer are all contained in a single Application Specific Integrated Circuit (ASCI).

1 3. The adapter of claim 1, wherein said data receive control circuitry is
2 programmable.

1 4. The adapter of claim 1, wherein said data transmit control circuitry is
2 programmable to generate said packet transmit signal when said transmit data buffer contains a
3 predetermined number of bytes of a data packet less than all of said data packet.

1 5. A method of transferring a packet of data from a computer network
2 communications media through an adapter to a host computer, said method comprising the
3 steps of:

4 a) receiving from said communications media through a transceiver and storing
5 in an adapter receive buffer a predetermined first receive threshold number of bytes of said
6 packet;

7 b) thereupon generating a first early receive interrupt from said adapter to said
8 host computer; and

9 c) thereafter receiving from said communications media through said
10 transceiver and storing in said adapter receive buffer a remainder of said packet;

11 wherein said host computer employs a driver allowing for early indications and
12 having an early lookahead size, and wherein said step of receiving a predetermined first
13 receive threshold number of bytes comprises receiving a number of bytes substantially equal to
14 said early lookahead size.

1 6. The method of claim 5, wherein said adapter and said host computer together
2 have an interrupt latency time, said method further comprising after said step of receiving a
3 predetermined first receive threshold number of bytes, the step of continuing to receive from
4 said communications media through said transceiver and store in an adapter receive buffer
5 bytes of said packet, wherein said step of receiving a predetermined first receive threshold
6 number of bytes further comprises receiving a predetermined first receive threshold number of
7 bytes substantially equal to said early lookahead size less a predetermined data receive rate
8 times said interrupt latency time.

1 7. The method of claim 6, further comprising, after the step of generating said
2 first interrupt, the steps of

3 a) evaluating the number of bytes stored in said adapter receive buffer against
4 said early lookahead size; and

5 b) adjusting said receive threshold if said evaluating step does not indicate
6 substantial equality.

1 8. The method of claim 5, wherein said packet comprises a preamble specifying
2 a length of said packet in bytes, said method further comprising after said step of generating a
3 first early receive interrupt and before said step of receiving a remainder of said packet, the
4 steps of:

5 a) adjusting said receive threshold according to said length of said packet;

6 b) continuing to receive from said communications media through said
7 transceiver and store in an adapter receive buffer bytes of said packet; and

8 c) thereafter generating a second early receive interrupt from said adapter to
9 said host computer, prior to complete reception of said packet.

1 ~~9. A method of transferring a packet of data from a host computer through an~~
2 ~~adapter to a computer network communications media, said method comprising the steps of:~~

3 ~~a) transferring from said host computer and storing in an adapter transmit buffer~~
4 ~~an early transmit threshold number of said bytes of said packet;~~

5 ~~b) thereupon initiating transmission of said packet through said transceiver from~~
6 ~~said adapter transmit buffer to said computer network communications media; and~~

7 ~~c) receiving from said host computer and storing in said adapter receive buffer a~~
8 ~~remainder of said packet, at least partially in parallel with transmitting said packet through said~~
9 ~~transceiver from said adapter transmit buffer to said computer network communications media.~~

1 ~~10. A method of transferring through an adapter packets of data between a host~~
2 ~~computer and a computer network communications media, said method comprising the steps~~
3 ~~of:~~

4 ~~a) receiving from said communications media through said transceiver and~~
5 ~~storing in an adapter receive buffer a predetermined first receive threshold number of bytes of~~
6 ~~a first packet;~~

7 ~~b) thereupon generating a first early receive interrupt from said adapter to said~~
8 ~~host computer;~~

9 ~~c) receiving from said communications media through said transceiver and~~
10 ~~storing in said adapter receive buffer a remainder of said first packet;~~

11 ~~d) transferring from said host computer and storing in an adapter transmit buffer~~
12 ~~an early transmit threshold number of bytes of a second packet;~~

13 ~~e) thereupon initiating transmission of said second packet through said~~
14 ~~transceiver from said adapter transmit buffer to said computer network communications media;~~

15 ~~f) receiving from said host computer and storing in said adapter receive buffer a~~
16 ~~remainder of said second packet, at least partially in parallel with transmitting said second~~

007670-0000

17 packet through said transceiver from said adapter transmit buffer to said computer network
18 communications media.

1 11. The method of claim 10, wherein each packet comprises a preamble
2 specifying a length of said each packet in bytes, said method further comprising after said step
3 of generating a first early receive interrupt and before said step of receiving a remainder of said
4 first packet, the steps of:

- 5 a) adjusting said receive threshold according to said length of said first packet;
6 b) continuing to receive from said communications media through said
7 transceiver and store in an adapter receive buffer bytes of said first packet; and
8 c) generating a second early receive interrupt from said adapter to said host
9 computer prior to complete reception of said first packet.

CONCLUSION

If the Examiner believes a telephone conference would expedite prosecution of
this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,

Date

1/21/00

James P. Cleary
Reg. No. P45,843

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, 8th Floor
San Francisco, California 94111-3834
Tel: (415) 576-0200
Fax: (415) 576-0300
SF 1057754 v1